

Abstract

Evaluation of serum vitamin D level and the assessment of vitamin D receptor polymorphisms FokI (rs10735810 T>C) and BsmI (rs1544410 G>A) in patients with medullary thyroid cancer

Purpose: Thyroid cancer is the most common endocrine malignancy. Lots of studies have shown anti-cancer effects of vitamin D in cancers. Polymorphisms of Vitamin D receptor can influence the prevalence of various cancers. In the present study, serum level of vitamin D and FokI, BsmI and Tru9I polymorphisms of vitamin D receptor were investigated.

Methods: 40 patient and 40 healthy were investigated. Genomic DNA of subjects were extracted with saturated salt/proteinase K and investigated by Polymerase Chain Reaction-sequencing. Serum level of vitamin D evaluated by ELISA technique. The results were analyzed by SPSS and GraphPad Prism 5 softwares.

Results: Genotypic and allelic frequency of FokI and BsmI polymorphisms have not shown significant different between test and control groups. In Tru9I polymorphism, Tt genotype abundance in the test group was 45 percent and in the control group were 17.5 percent and t allelic abundance in the test group were 25 percent and in the control group were 8.7 percent which these differences were significant. Average serum level of vitamin D in the test group was 23.32 ng/ml and in the control group was 18.95 ng/ml which was statistically significant.

Conclusions: Unexpectedly, serum levels of vitamin D in the test group were higher than the control group. Tru9I polymorphism is significantly correlated to medullary thyroid carcinoma prevalence.

Keywords: Thyroid Neoplasms - Vitamin D Receptor, Vitamin D - gene polymorphism.